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**PHYCOLOGICAL OBSERVATIONS—XIV:
ACROCYSTIS NANA ZANARDINI, A NEW ALGAL
RECORD FOR THE PHILIPPINES¹⁾**

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With Text-figures 1-2

Abstract

A red marine alga, *Acrocystis nana* Zanardini (Rhodomelaceae, Rhodophyceae), collected from Calapan, Oriental Mindoro approximately 13.5°N and 121.1°E, is herein described and reported for the first time from the Philippines.

Introduction

In August 1980 a fieldwork was conducted in Calapan, Oriental Mindoro (Fig. 1), by the present investigator and his graduate students enrolled in Advanced Phycology, University of Santo Tomas (UST). In the course of the field-work, there were few interesting marine algae collected. Among the highly prized algal specimens was *Acrocystis nana* Zanardini, collected by Mrs. Lolita J. Bulalacao, Biology Doctoral student at UST and Faculty Member of the Philippine Normal College. This rare, tiny and colonial rhodomelaceous alga was found growing on rocks exposed at low tide in association with *Bostrychia tenella* (Vahl) J. Agardh.

In the Philippines, the family Rhodomelaceae is well represented by the genera *Acanthophora*, *Amansia*, *Bostrychia*, *Chondria*, *Digenea*, *Herposiphonia*, *Laurencia*, *Leveillea*, *Neurymenia*, *Polysiphonia*, *Tolypiocladia*, and *Vidalia*. These genera appeared in the taxonomic treatise of Velasquez *et al.*, 1971; Trono 1974; Saito 1969; Reyes, 1971; Menez, 1961; Domantay, 1961; Cordero, 1977, etc.

From the neighboring countries of the Philippines, *Acrocystis nana* was earlier reported by Okamura (1907) using the 1902 collections from Amakusa Island, Japan. Later reports from Japan were those of Segawa (1956) and Chihara (1970). Only Dawson's (1954) report of *A. nana* from Vietnam stands closest to the Philippines. Earlier, though, Weber van-Bosse (1923) included *A. nana* in her account of the marine algae gathered during the Dutch Siboga Expedition.

The presence of *A. nana* in the Philippine waters is most expected considering the proximity of the type locality, which is Borneo, and the fact that the plant's geogra-

1) Part of an on-going project entitled "New and Noteworthy Philippine Marine Algae," funded by the Philippine National Museum.

phical distribution is confined to the Indo-Pacific region.

However, this is the initial report that documents the existence of *A. nana* in the Philippine waters.

Study Area

Calapan, Oriental Mindoro is barely 2-2 1/2 hours by commercial boat from Batangas Province. The collecting areas included Punta Lazareto and Barangay Balete about 5-6 kilometers apart. The entire coast of Calapan is washed by the waters of the South China Sea that cuts through the Batangas Channel. The water is relatively rough during the rainy months.

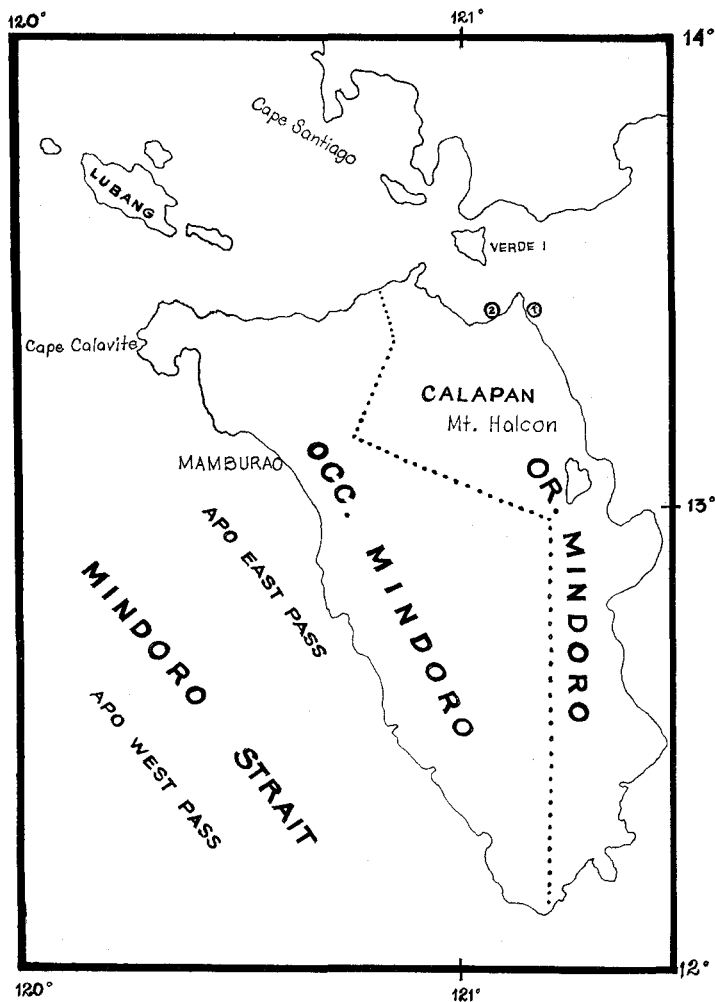


Fig. 1. Collecting stations of *A. nana* Zanardini in Calapan, Oriental Mindoro: (1) Punta Lazareto, (2) Barangay Balete.

Punta Lasareto is approximately 3 kms from Calapan town proper. The coast is sandy near the oil depot becoming rocky towards the direction of Calapan town. Boulders, every now and then partly submerged by the incoming tide, fringe the collecting area and on the wet side of the boulders grow thick associations of *Acrocystis nana* and *Bostrychia tenella*. Below the *Acrocystis-Bostrychia* belt are low growths of *Gelidiopsis repens*, *Gracilaria salicornia*, *Padina japonica* and *Carpopeltis crispata*. Submerged species of *Halymenia dilatata*, *H. durvillaei*, *Polysiphonia* sp. compose the intertidal flora.

Barangay Balete, is about 3 kms north-east of the Calapan town proper. Boulders are smaller than those found in Punta Lasareto, but this type of a substratum supports growths of *Gelidiella acerosa*, *Gracilaria eucheumioides*, tiny *Gelidiopsis repens*, *Ulva lactuca*, *Neomeris annulata*, few *Turbinaria* and rhizomes of *Sargassum* spp. *Gracilaria eucheumioides*, easily the most dominant alga, forms thick mats on the rocky coast.

Taxonomic Treatment

Dried materials are kept in the Philippine National Herbarium (PNH), of which voucher specimens will be sent to select Asian, European and American herbaria as exchange plant materials.

The phyco-geographical distribution follows that of Cordero (1977).

Class RHODOPHYCEAE

Order Ceramiales

Family Rhodomelaceae

Genus *Acrocystis* Zanardini

Acrocystis nana Zanardini

(Fig. 2)

Okamura 1907: 23, pls. 6 & 7 Weber-van Bosse 1923: 356; Dawson 1954: 461, fig. 636, C; Segawa 1956: 115, pl. 69, fig. 558; Chihara 1970: 159.

Plants dark purplish-brown, soft, growing in narrow patches in association with *Bostrychia tenella*. Frond hollow, obovate to ovato-pyriform in outline, borne by short, solid, cylindrical pedicel issued singly or subfasciculate from prostrate rhizome. It reaches 5–6 mm in height, globose portion averages 2–2.5 mm. Rhizome is barely 0.5 mm thick, usually branched.

Initially, the plant is appressed to the substrate brought about by the protrusion of hair-like to thickened root-fibers. From the rhizomes arise vertical branches (fronds), the apical portion assuming globose or bulb-shape. The globose structure changes to obovate or pyriform with age. The apex of frond roundish to slightly depressed upon maturity.

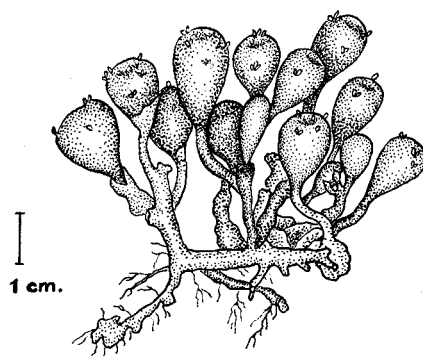


Fig. 2. Habit of *A. nana* Zanardini.

The pedicels are solid and gradually narrowed at the neck portion which together with the rhizome consists of parenchymatic cells in cross-section. Furthermore, the central axis of both vegetative parts are surrounded by 5 pericentral cells, where the heavily packed parenchymatic cells arise. Next to this layer are 1–2 layers of epidermal cells.

Rhizoidal cells arise from the intercellular spaces between the central axis and the pericentral cells as well as outside of the latter.

Descriptive Materials:

North-Western Luzon-ORIENTAL MINDORO, Calapan, Punta Lasareto, PNH **129024**; Calapan, Balete, PNH **129025**, August 1980. Growing on rocks in association with *Bostrychia tenella* reached only during extreme high tide.

Remarks:

The Philippine materials are slightly smaller compared to the one reported from Japan which reaches 1 cm tall, 2–4.5 mm diameter of the globose structure and 1 mm thickness of the pedicel.

Acknowledgement

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LITERATURE CITED

- Chihara, M. 1975. *Gakken-Chu-ko Sei* (Illustrated Marine algae) 290 p.
 Cordero, Jr. P.A. 1977. Studies on Philippine marine red algae. Spec. Publ. Seto Mar. Biol. Lab., Kyoto Univ. ser. IV, 258 p., 28 pls. 266 text-figs. 1 map.

- Dawson, E.Y. 1954. Marine algae in the vicinity of the Institut Oceanographique de Nhatrang, Vietnam, Pac. Sci. 8 (4): 373-469, 63 figs.
- Domantay, J. 1961. An ecological survey of the marine vegetation of the Hundred Islands and vicinity. Phil. Jour. Sci. 90: 271-295.
- Menez, E.G. 1961. The marine algae of the Hundred Islands. Phil. Jour. Sci. 90: 37-87.
- Okamura, K. 1907. Icones of Japanese Algae. Vol. 1, 1-257, pls. 1-50. Tokyo (Published by the author).
- Reyes, A.Y. 1971. A survey of the littoral benthic algae of coastal areas of Dumaguete City. Phil. Jour. Sci. 9: 131-163.
- Saito, Y. 1967. The algal genus *Laurencia* from the Hawaiian Islands, the Philippines and adjacent waters. Pac. Sci. 23: 148-159, 11 text-figs.
- Segawa, S. 1956. Colored Illustrations of the Seaweeds of Japan. 175 p., 72 pls.
- Trono, Jr. G.C. 1974. The marine benthic algae of Siasi Island and vicinity. KALIKASAN, Philipp. J. Biol. 3: 83-97.
- Velasquez, G.T., D.F. Cornejo, A.E. Santiago and L.B. Arcega. 1971. Algal communities of exposed and unprotected marine waters of Batangas and Bataan. Phil. Jour. Sci. 100: 1-40, 14 pls.
- Weber van Bosse, A. 1923. Listes des algues du Siboga. III. Rhodophyceae secund partie, Ceramiales. 3: 311-392. E.J. Brill. Leiden.